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NEW SPECIES OF FUNGI FROM VARIOUS LOCALITIES.

BY J. B. ELLIS AND B. M. EVERHART.

THELEPHORA FLORIDANA, E. & E.—On bark of dead limbs. Florida, W. W. Calkins, No. 187. Resupinate; following the inequalities of the bark, and forming a thin, continuous umber-colored stratum, several inches in extent; margin thin, concolorous; component threads, about 5μ in diameter, distantly septate, much branched, many of the branches issuing nearly at a right angle; spores subglobose, rough (echinulate), large, 10μ in diameter. In its thin loose texture, approaching *Zygodesmus*.

PHYLLOSTICTA IVÆCOLA, E. & E.—On living leaves of *Iva frutescens*. Plaquemines Co., La., Jan., 1886, Rev. A. B. Langlois, 193. Spots amphigenous, small (1—2 millim.), whitening out, with a slightly raised, narrow, brown border. Perithecia ephiphyllous, punctiform ($75-90\mu$), thin, black, sporules ovate- or oblong-elliptical, hyaline, $4-5 \times 1\frac{1}{2}\mu$.

CYPHELLA SUBCYANEA, E. & E.—On living leaves of *Sabal Palmetto*. Louisiana, Nov., 1885. Rev. A. B. Langlois, No. 57. Shallow cup-shaped, thin, substipitate, oblique, less than 1 millim. across, whitish and nearly smooth outside, hymenium bluish, or lead colored. Spores filiform, multinucleate, upper end thickened, curved into a semicircle, $40-60\mu$ long by $1\frac{1}{2}\mu$ thick, on short ($10-12 \times 1\frac{1}{2}-2\mu$) subcylindrical sporophores, which are a little thickened below.

Cyphella Bonanæ, Cke., has spores $10-12 \times 2\frac{1}{2}\mu$ and disk snow white, *C. musæcola*, B. & C., has an orange disk and *C. Palmarum*, B. & C., is white with a tomentose stipe.

DIPLODINA GALLÆ, E. & E.—On oak galls. Massachusetts, Miss C. H. Clarke. Small, black, scattered, covered by the epidermis which is soon ruptured, exposing the suberumpent perithecia which lie either singly or in little groups of 3-6. Spores obovate, 1-septate, subhyaline (with a yellowish tint), $10-12 \times 5-7\mu$, on stout pedicels. Differs from *Sphæropsis gallæ*, B. & C. (which is not a *Sphæropsis* but a *Phomæ* with small ($5-6 \times 2-3\mu$) hyaline spores), in its much larger 1-septate spores.

SEPTORIA SYMPHORICARPI, E. & E.—On leaves of *Symphoricarpos*. Valley City, Dakota, Aug., 1884. Prof. A. B. Seymour. Spots subcircular, small (1—2 millim.), white with a brown border. Perithecia sublenticular, black, epiphyllous, few (1—5), prominent; sporules subcylindrical, a little narrower below, nearly straight, 20—40 (mostly 30—40) $\times$ 2 μ and faintly 1—3 septate. The white spots are often included in larger irregularly-shaped rusty-brown spots and areas of the leaf, but the perithecia are, so far as observed, confined to the white spots. Besides the large brown spots, the leaves are thickly spotted with smaller (1—2 millim.) brown spots.

PESTALOTZIA SUFFOCATA, E. & E.—On living rose leaves kept for some days under a bell-glass. Prof. F. L. Scribner. Erumpent in black cirrhi. Conidia oblong-fusiform, 22—26 $\times$ 5—6 μ , the three inner cells brown, the terminal ones hyaline, contracted below into a pedicel about as long as the conidia and crowned above with a crest of three hyaline spreading bristles 25—30 μ long.

MELANCONIUM TRIANGULARE, E. & E.—(N. A. F. 1568.) On dead limbs of *Carpinus Americana*. West Chester, Pennsylvania, June, 1882. Everhart & Haines. Acervuli subepidermal, orbicular, thin, stroma cortical, elevated in the center into a little conical pustule. Spores obtusely triangular, small (5—6 μ), brown under the microscope, black when seen in mass on the matrix, borne on the tips of slender basidia about 15 $\times$ 1 μ , at length oozing out. In the early stage of growth, the stroma is distinctly multilocular, but this structure finally disappears. The shape of the spores indicates a relationship to *Asterosporium*. Found on the same limbs with *Valsa* (*Diaporthe*) *Ellissi*, Rehm., probably its pycnidial stage, thus indicating that this last-named species is a near ally of *Melanconis*, a supposition still further strengthened by the faintly appendiculate sporidia with a thin, gelatinous coat.

SPORIDESMIUM INQUINANS, E. & E.—Under side of a decaying oak plank. Plaquemines Co., La., Dec., 1885. Rev. A. B. Langlois, 139, in part. Forming a dense purplish-black, pulverulent layer, having almost the same appearance as *Torula herbarum*, Pers. Conidia subglobose, roughish, opaque, 12—25 μ in diameter, pedicellate, but the pedicels, which are about equal in length to the diameter of the conidia, are soon deciduous. The conidia, with their closely compacted, component cells, are much like those of *S. hysteroideum*, C. & E., and somewhat resembles blackberries. Nearly allied to *S. lepraria*, B. & Br., but more pulverulent, and conidia smaller.

SPORIDESMIUM HELICOIDES, E. & E. Under side of an old oak plank. Plaquemines Co., La., Dec., 1885. Rev. A. B. Langlois, No. 139. Compacted into a thin, black, crustaceous layer, forming patches 2—3 cm. long by about 1 cm. wide, and composed of cylindrical, dark-colored, multiseptate conidia, 40—60 μ long and 6—8 μ wide, some of which are nearly straight, but oftener the tips are involute, so as to resemble the conidia of *Helicomycetes*; occasionally, one or more cells are

divided by a longitudinal septum. Allied to *S. larvatum*, C. & E., but quite distinct from *S. helicosporum*, Sacc., in which the conidia are represented as arising from prostrate threads.

RHIZOCTONIA CARNEA, E. & E.—Among decaying chips, Potsdam, New York. Consisting of oblong, or subglobose, flesh-colored tuber-like bodies about $\frac{1}{4}$ of an inch thick and $\frac{1}{4}$ — $\frac{1}{2}$ an inch long, either grown together in irregular-shaped botryoidal masses, or lying singly, and connected by a white, fibrous mycelium.

CYLINDROCOLLA CYLINDROPHORA, E. & E.—On the under side of rot-pine logs. Newfield, New Jersey, Nov., 1885. When fresh, appearing like minute (1 millim.), milky, or nearly transparent drops of a soft, gelatinous texture. This gelatinous mass is filled with fasciculate, erect, slender, dichotomous threads, bearing, laterally, oblong-cylindrical, hyaline spores which are at first granular, but become 1-septate and about $20-24 \times 5-6 \mu$. The gelatinous masses are sometimes confluent for 3—4 millim. When dry, the fungus disappears entirely, but, on moistening the specimen for a few hours, appears again.

NECTRIA POLIOSA, E. & E.—Parasitic on *Diatrype platystoma*, Schw. Florida, Jan., 1886. W. W. Calkins, No. 138. Perithecia scattered, membranaceous, orange red, ovate-globose, one sixth millim. in diameter, sparsely clothed, except the papilliform ostiolum, with straight, spreading, hyaline, septate, glandular hairs, about equal in length to half the diameter of the perithecia. Asci sessile, oblong-cylindrical, about $75 \times 12 \mu$; sporidia biseriata, oblong, or subfusiform-oblong, and subinequilateral, hyaline, uniseptate and slightly constricted at the septum, containing several nuclei irregularly placed, $18-22 \times 7-8 \mu$, ends rounded, or subacute. The hairs which clothe the perithecia are at first about 7μ thick with the ends obtuse and a little swollen, but at length they become elongated and attenuated above.

This must be nearly allied to *N. tephrothele*, Berk., but in the description of that species, the perithecia are not described as hairy.

NECTRIA COCCICOLA, E. & E.—On scale lice on bark of living orange trees. Florida. Com. Prof. F. L. Scribner. Perithecia caespitose, membranaceous, about $\frac{1}{3}$ millim. in diameter and $\frac{1}{2}$ millim. high, flesh color, becoming dirty buff when mature, obovate, astomous, surface roughish, with a few scattered white rudimentary hairs, or at length bald. Asci clavate-cylindrical, $150-190 \times 20 \mu$, with abundant, rather stout paraphyses; sporidia eight in an ascus, clavate-cylindrical, multinucleate, hyaline, $100-140 \times 6-7 \mu$ at the upper end, attenuated below. The groups of perithecia are seated either on the shells of dead insects or on the bark itself, with a subiculum more or less distinct, composed of white decumbent, or prostrate, hairs of the same character as those found on the Perithecia themselves. The species seems to be quite distinct from any of those described under the subgenus *Ophionectria* where this belongs.

DIATRYPE TEXENSIS, E. & E.—On bark of fallen limbs of (*Tilia*?). Houston, Texas, April, 1869. H. W. Ravenel, No. 130. Stroma subcarbonaceous, black, suborbicular, 2—4 millim. across, at length plane, or subconcave above, seated on the surface of the inner bark and bursting through the epidermis which closely surrounds it; perithecia coriaceous, with thick walls, globose, or subangular by pressure, 6—20 in each stroma, $\frac{1}{3}$ — $\frac{1}{2}$ millim. in diameter; ostiola subtuberculiform, or hemispheric, with a rather large, though indistinct opening; asci clavate-cylindrical, about $75 \times 12 \mu$, with abundant paraphyses; sporidia partly biseriate, yellowish-brown and 1-septate at first, becoming dark-brown and 3-septate, ovate or oblong-elliptical, $15\text{--}20 \times 6\text{--}7 \mu$, scarcely constricted at the septa, the terminal cells subhyaline. Has much the same general appearance as *D. cincta*, B. & Br. The bark and the surface of the wood beneath the stroma is more or less blackened. This would come under Saccardo's genus *Thyridaria*.

VALSA (CALOSPHERIA) HYLDES, E. & E. (Grk. *hylodes*, bushy.)—On smooth bark of a decaying log. Louisiana, Nov., 1885. Rev. A. B. Langlois, 111. Perithecia membranaceous, globose, $\frac{1}{2}$ — $\frac{3}{4}$ millim. in diameter, in clusters of 4—6, buried in the scarcely altered, fibrous substance of the inner bark, their stout, cylindrical, roughish, black ostiole, $\frac{1}{3}$ millim. long, pierced with a small aperture at the smooth, rounded apex, bursting through the epidermis (which is not split or torn) in little fascicles, with numerous light-brown, coarse, tow-like hairs as long or a little longer than the ostiole, and causing the surface of the bark to appear as if covered with clumps of miniature bushes. The ostiola are of a carbonaceous character, as they readily break square off, so as to appear truncate. The clusters of perithecia lie in parallel series, or lines, extending for three or more centimeters, and the epidermis, which remains closely attached is scarcely elevated by the subjacent perithecia. Asci clavate, with a slender, thread-like base, spore-bearing part $18\text{--}22 \times 5 \mu$, with the upper part broader and obtuse. Sporidia cylindrical, hyaline, or with a faint yellow tint, rather strongly curved, about $5\text{--}1 \mu$, with a faint nucleus near each end.

LOPHIOSTOMA FLORIDANUM, E. & E.—Parasitic on old *Diatrype* stigma. Florida, Jan., 1886. W. W. Calkins, Nos. 123, 147. Perithecia gregarious, or scattered, hemispherical, black and rough, about $\frac{1}{4}$ millim. in diameter; ostiolum linear, extending quite across the apex of the perithecium, but scarcely prominent. Asci clavate, cylindrical, $80 \times 8 \mu$, with an elongated, slender base and surrounded with abundant filiform paraphyses. Sporidia biseriate, fusiform, slightly curved, olivaceous, 4-nucleate, uniseptate, constricted at the septum, just above which they are slightly swollen, $18\text{--}20 \times 4\text{--}4\frac{1}{2} \mu$. The matrix is overrun with a hyphomycetous growth, which also embraces the base of the perithecia, but we can not say whether this is accidental. This is quite distinct from *Dothidea episphæria*, Pk., and *Sphæria nigerrima*, Blox.

LEPTOSPHERIA CONSIMILIS, E. & E.—On dead willow limbs, near Huron, Dakota, autumn, 1885. Miss Nellie E. Crouch. Perithecia scattered, carbonacio-coriaceous, $\frac{1}{3}$ millim. in diameter, at first covered and raising the fibers of the wood or bark into little pustules, ostiola papilliform, soon erumpent. Asci subcylindrical, $80-100 \times 15-20 \mu$, with abundant paraphyses. Sporidia eight in an ascus, subbiseriate, cylindric-fusiform, 3-septate and subhyaline at first, becoming yellow, and finally dark-brown, about 7-septate, more or less constricted at the septa, $28-35 \times 8-10 \mu$. Apparently allied to *Sphaeria Baggei*, Auersw., which is said to have greenish-yellow, 3-5-septate, sporidia. In the Dakota specimens, the mature sporidia are quite constantly 7-septate, exceptionally 8-septate. The perithecia occur both on decorticated limbs and on those still covered with the bark, but in the latter case, the bark is old and somewhat decayed.

LEPTOSPHERIA CASSIÆCOLA, E. & E.—On dead stems of Cassia. Houston, Texas, April, 1869. H. W. Ravenel, No. 128. Perithecia gregarious, minute, one eighth to one sixth millim. in diameter, covered by the blackened epidermis, which is raised into little pustules and at length pierced by the papilliform ostiola; asci, $70-75 \times 8-10 \mu$; sporidia biseriate, fusiform, slightly curved, 5-septate, yellow-brown, not constricted at the septa. Has the general aspect of a *Sphaerella*.

PLEOSPORA CASSIÆ, E. & E.—With the preceding species. Perithecia $\frac{1}{4}$ millim. in diameter, covered by the epidermis, which is raised in a pustuliform manner, but not blackened, and barely pierced by the papilliform ostiolum; asci subcylindrical, rather abruptly contracted at the base, $75-80 \times 10-12 \mu$; sporidia biseriate, yellow-brown, oblong-elliptical, 3-septate, and constricted at the middle septum, lightly curved, one or both the inner cells, with a longitudinal septum. The perithecia at length are slightly collapsed above.

SPHERIA (MONTAGNELLA) TUMEFACIENS, Ell. & Hark.—N. A. F., No. 1667. On dead limbs of *Artemisia Californica*. Mt. Diabolo, Cala. Dr. H. W. Harkness. Perithecia hemispherical, one fifth to one third millim. in diameter, black, rough, crowded, united below into a crustose stroma, bursting out through longitudinal cracks in the bark and forming densely-compacted series, continuous, or interrupted, 3-5 cm. long on swollen portions of the limb or stem. Asci $100-120 \times 10-12 \mu$. subcylindrical, with abundant paraphyses; sporidia mostly biseriate, cylindric-fusiform, slightly curved, 3-septate, yellowish, $25-30 \times 6-7 \mu$. Bears a general resemblance to *Dothidia morbosa*, Schw., but the perithecia are arranged in series and the sporidia are quite different.

AMPHISPHERIA HYPOXYLON, E. & E.—Parasitic on some effused Hypoxylon. Plaquemines Co., La. Rev. A. B. Langlois, No. 138. Perithecia densely gregarious, superficial, globose ($\frac{1}{4}$ millim.), rough, black, subpruinose, membranaceo-carbonaceous; ostiolum slightly prominent, asci clavate-cylindrical, $55-65 \times 10-12 \mu$, with abundant paraphyses; sporidia 1-seriate, oblique, ovate-elliptical, brown, uniseptate, $8-9 \times 5 \mu$.

MELIOLA SANGUINEA, E. & E.—On leaves, stems and petioles of *Rubus trivialis*. Louisiana, Jan., 1886. A. B. Langlois, No. 74. Perithecia membranaceous, $\frac{1}{4}$ — $\frac{1}{3}$ millim. in diameter, subastomous, smooth, or at least without any bristle-like appendages, mostly epiphyllous, and either solitary or several in a small, rather compact group, on orbicular, subindeterminate patches of black, branching mycelium, with alternate, obovate, haustoria-like processes, much the same as those of *M. amphitricha*, Fr. Asci oblong-obovate, 2-spored; sporidia oblong-cylindrical, slightly curved, 3-septate, 38—44 x 12—15 μ , ends obtuse, hyaline, becoming brown. The leaves on which the fungus occurs are mostly stained a bright red color.

ASTERINA MINOR, E. & E.—On dead twigs. Houston, Texas, April, 1869. H. W. Ravenel, No. 183. Perithecia applanate, superficial, orbicular, $\frac{1}{4}$ millim. in diameter, black, mycelium obsolete; asci obovate, 25—30 x 12—15 μ ; sporidia crowded, oblong-obovate, 1-septate, yellowish, 10—13 x 3—3 $\frac{1}{2}$ μ (becoming brown?). Differs from *A. ramularis*, Ell., in its smaller perithecia and sporidia.

THE LEAF FUNGI OF FLORIDA.--NO. 3.

BY W. W. CALKINS, CHICAGO, ILLINOIS.

The species found on trees, shrubs and herbaceous plants are numerous and interesting. I shall only refer to those collected by myself, all of which have been properly identified by specialists. The *Osmanthus Americana* (Devil wood), produces several star-like forms, known as *Asterina discoidea*, E. & M., *A. asterophora*, E. & M.—a new species just discovered. Also *Meliola amphitricha*, Fr. The former appear like little black dots to the naked eye, and the latter more web-like. Under the glass, their true structure appears. On *Ilex Dahoon*, *Asterina orbicularis*, B. & C., frequently covers the under side of the leaves. *Myrica cerifera* (Wax myrtle), is the home of the rare *Nectria erubescens* Desm., of which I have found but few specimens. Here also occur *Meliola manca*, E. & M., and *Phyllosticta Myricæ*, Cke. *Persea Carolinensis* and var. *palustris* (Red Bay) produce *Helminthosporium fumosum*, E. & M., on large black blotches. The varieties of *Quercus* abound in leaf fungi, such as *Ailographum* and *Meliola manca*. Various *Cercospora* may be found on leaves of *Smilax* and *Rubus*. I have not yet got down to weeds, grasses, etc., but we know that all have their own peculiar and distinct forms and their appropriate place in the great order of fungi. Many others might be mentioned, but not having yet been detected by me, I omit them.